

# Notice of Allowability

Application No.

10/786,091

Examiner

Susy N Tsang-Foster

Applicant(s)

MATSUURA ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed on 12/23/2004.
2. ☒ The allowed claim(s) is/are 9-14, 16 and 17.
3. ☐ The drawings filed on \_\_\_\_\_ are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☒ Certified copies of the priority documents have been received in Application No. 09/141,140.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
  - \* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

## Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

**EXAMINER'S AMENDMENT**

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

The application has been amended as follows:

**IN THE ABSTRACT:**

In line 5, change "said" to --the--.

In line 6, change "said" to --the--.

2. Reason for amending the abstract:

The abstract was amended to remove legal phraseology.

3. Claims 9-14, 16, and 17 are allowed.

4. The following is an examiner's statement of reasons for allowance:.

The closest prior art of record, the IPDL JPO Machine Translation for JP 08-315852 A discloses a method of manufacturing a metal hydride alkaline storage cell comprising the steps of preparing a negative electrode by applying a paste onto a current collector, wherein the paste contains a hydrogen-absorbing alloy powder and a metal sulfide compound in an amount of 0.3 wt % based on the weight of the hydrogen alloy powder (see paragraphs 1, 18, 19 of machine translation and claims 1-5). The metal sulfide can be  $K_2S$ ,  $SnS$ ,  $Na_2S$  and  $Sb_2S_3$  (see claims 1-5).

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of the reference). However, the reference does not disclose, teach, or suggest that the metal sulfide is cobalt sulfide or nickel sulfide.

The closest prior art of record, Yamamura et al. (US Patent No. 5,879,429) discloses treating a hydrogen storage alloy by depositing cobalt or copper onto the surface of the alloy (col. 5, lines 18-40) by immersing the hydrogen storage alloy into an alkaline solution at a temperature of 65 °C or higher containing the cobalt ions or copper ions (col. 3, lines 5-10). The treated hydrogen storage alloy is to be used in a negative electrode of a metal hydride alkaline storage cell (col. 7, lines 35-47). The cell also comprises a positive electrode, and a separator impregnated with an electrolyte (col. 7, lines 55-63). The hydrogen storage alloy can be  $\text{MmNi}_{3.7}\text{Co}_{0.6}\text{Mn}_{0.4}\text{Al}_{0.3}$  (col. 10, lines 10-15) which inherently has a  $\text{CaCu}_5$  type crystal structure. The amount of cobalt to be coated in the negative electrode is 0.6 weight percent of the alloy contained in the electrode (col. 10, lines 40-45). In an alternative embodiment, the amount of copper to be coated in the negative electrode is 0.6 weight percent of the alloy powder (col. 15, lines 1-10). A source of the copper ions to be coated is copper chloride and a source of the cobalt ions to be coated is cobalt chloride (col. 3, lines 15-25).

However, Yamamura et al. do not disclose, teach or suggest adding a catalytic metal fluoride, a catalytic metal chloride, a catalytic metal iodide, or a catalytic metal sulfide in either the negative electrode comprising the hydrogen storage alloy powder or in the electrolyte of the cell in an amount of 0.1 to 2.5 wt% based on the weight of the hydrogen storage alloy powder.

The closest prior art of record, Mori et al. (US Patent No. 5,506,070) disclose a method of making a negative hydrogen storage alloy electrode for a battery comprising adding a cobalt

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powder in an amount of 3 to 20 weight percent to the hydrogen adsorbing alloy powder (col. 3, lines 35-50) and that a cobalt compound or a cobalt including alloy soluble in the alkaline electrolyte is added in place of simple cobalt powder (col. 10, lines 13-16). Examples of cobalt compound include cobalt monoxide, cobalt oxides or hydroxides (col. 8, lines 5-27). However, Mori et al. do not disclose, teach, or suggest that the cobalt compound can be iodides, sulfides, fluorides and chlorides of cobalt.

The closest prior art of record, the IPDL JPO Machine Translation for JP 07-211344 discloses adding a fluorine compound such as NaF, KF, ammonium fluoride, MgF, that are soluble in water to a KOH solution that is used as an electrolyte for a battery using hydrogen storage alloy as an electrode but JP 07-211344 does not disclose, teach, or suggest that the amount of the fluorine compound added to the KOH solution is 0.1 to 2.5wt% based on the weight of the hydrogen storage alloy powder in the electrode.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

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Any inquiry concerning this communication or earlier communications should be directed to examiner Susy Tsang-Foster, Ph.D. whose telephone number is (571) 272-1293. The examiner can normally be reached on Monday through Friday from 9:30 AM to 6:00 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached at (571) 272-1292.

The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

st/ *Susy Tsang-Foster*

Susy Tsang-Foster  
Primary Examiner  
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